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Status of Commercial Space Transportation Market--1992

I. OVERVIEW

The international commercial market for medium and large communication satellite launches remains stable at approximately 10-15 per year, roughly split between United States companies and Arianespace, with increased activity, however, by the Peoples' Republic of China. As provided in the July consultations, the latest Launch Manifest released by the U.S. Department of Transportation (DOT) in June contains eight commercial launches scheduled or already conducted for 1992. These include seven launches of communications satellites licensed by the U. S. DOT and a National Aeronautics and Space Administration (NASA) spacecraft known as Mars Observer. These launches are expected to generate revenues of more than $500 million.

DOT also licensed nine commercial launches of small launch vehicles in 1992: six suborbital rockets carrying small research payloads, one launch of a small Brazilian environmental satellite, and the launch and reentry of NASA's Commercial Experiment Transporter (COMET) vehicle, which will be used for microgravity experiments that remain in orbit for approximately one month and then return to a landing site on earth. These launches will generate approximately $60 million in revenues.

II. INTERNATIONAL LAUNCH INDUSTRY

The international launch industry consists of half a dozen companies which were described in the presentation of last July. U.S. launch companies include General Dynamics, Martin Marietta and McDonnell-Douglas, which launch larger satellites, and E.E.R. Systems, Conatec, Orbital Sciences Corporation, American Rocket Company, LTV Missiles and Space, International Microspace and SEALAR Corporation. The latter two are additions to the previous list.

The PRC offers the Long March family of vehicles and have contracts for Optus B1, Optus B2, INTELSAT VIIA and Afristar 1. Other potential contracts include the Asia Pacific and ASIASAT-2 satellites.

Russia will be a probable new entrant in the international launch market. The United States has decided to consider favorably a decision expected by the INMARSAT Organization to launch one of the INMARSAT 3 satellites in the 1995-96 time period with a Proton launcher. This is a one time exception to standing U. S. policy, accompanied by Russian assurances that the terms and conditions of their proposal, including pricing, are consistent with those that would normally be offered in the international market. The Russians have a family of launch vehicles to offer to the international payload community.

Japan's space launch program is continuing to evolve, although the previously planned 1993 date for first launch of their H-2 rocket will probably slip one year.

The leaders in the international market continue to be Arianespace, with over 50% of the market share, followed by MCDonnell Douglas and General Dynamics. Orbital Sciences Corporation is considered the world leader in the small launch services provider class (to Low Earth Orbit, or LEO). If the remaining 1992 launches take place as scheduled, the total number of launches for the year will be 16: Ariane 8, Delta 3; Atlas 3; and Long March 2.

U. S. large launch companies that launch medium and large satellites charge between $40 and $115 million or more per launch, depending on the payload size and the launcher used.

III. INTERNATIONAL LAUNCH MARKET

Although demand for launch services for medium and large payloads appears to have leveled off during the past year, the situation could change. Planned constellations of small, low earth orbit (LEO) satellites will increase the demand for launch services. If Direct Broadcast Satellites become more viable, demand will be further stimulated. Forecasts for increases in total worldwide demand for geostationary satellite launches range as high as 20 per year.

A growing segment of the space transportation industry is based on small launch vehicles. Small launch vehicles serve the market for relatively light-weight payloads (up to 1,000 pounds to LEO), or suborbital flights. These payloads will consist of telecommunications satellites and microgravity experiments. Demand for small launch vehicle services is expected to grow significantly during the next several years as planned networks of LEO telecommunications satellites begin to be developed.

Increases in commercial demand for launch services, particularly for medium and large satellites, will have active international competition, with new or improved launchers offered by the European Space Agency, U. S. companies, Japan, the PRC, and Russia. The coming year will see the latest form of commercial space transportation in the form of reentry vehicles. The first is the previously mentioned COMET, scheduled for launch and recovery. A substantial market for recoverable microgravity experiments is predicted by the turn of the century.

IV. INTERNATIONAL SATELLITE MARKET

Commercial communications satellites continue to be the dominant sector of the U. S. space industry. Production of complete COMSAT systems produced revenues of $2.6 billion in 1991, up seven percent from the previous year.

U. S. satellite manufacturers produced nine satellites in 1991

valued at $1.3 billion. Sales revenues were level with the previous year but are expected to increase significantly during the next three years, with 10 U. S. satellites scheduled for delivery in 1992, 12 in 1993, and 13 on order for 1994. Satellites scheduled for delivery between 1992 and 1997 by U. S. companies include 22 for domestic customers, 12 for INTELSAT OR INMARSAT, 18 for foreign customers, and 5 for U. S. private international systems. This trend will continue through the 1990s, as U. S. satellite operators and international satellite consortia launch new satellites to replace those reaching the end of their design life, as well as to expand existing systems.

Small satellites are projected to be an expanding sector of the market. The 11 satellite applications pending before the FCC propose to build well over 270 smallsats amounting to over $4 billion in expenditures in the next five years if all should go forward. Smallsats weigh less than 1000 pounds and carry less than 12 transponders. Thus far, three of these applicants have been granted authorization to proceed with experimental development and testing. The smallsats constitute a potentially large market for U. S. satellite manufacturers, and consequently many potential launches. However, none of these plans will be implemented until the mid-1990s, and substantial revenues are not expected in the near term.

V. CONCLUSION

The space transportation market remains thin. The number of launches of large satellites is expected to remain stable at current levels, but the number of launch services providers is increasing. It is essential that participants in the international market support the application of market principles to international competition in the provision of launch services, including avoidance of unfair trade practices. Otherwise, disruption can occur that would have profound and lasting negative impacts on the international commercial space transportation market.